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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,046	09/08/2000	Takayuki Nakajima	450100-02700	2525
20999	7590	08/12/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			HANNETT, JAMES M	
			ART UNIT	PAPER NUMBER
			2612	
DATE MAILED: 08/12/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,046

Applicant(s)

NAKAJIMA ET AL.

Examiner

James M Hannett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION***Response to Arguments***

Applicant's arguments, see Amendment A, filed 5/17/2004, with respect to the rejection(s) of claim(s) 1-10 under 35 U.S.C. 102(e) as being anticipated by USPN 6,018,363 Horii have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of USPN 6,256,068 Takada et al.

The applicant should note that examiner search on Google and EAST for the claimed term "spatial phase synchronization means" and other renditions of the term and came up with no patents or references that used that term. In light of that, the examiner uses the applicant's specification to determine the functionality of the claimed spatial phase synchronization means and has equated horizontal and vertical interpolation circuits that multiply the image data by weight factors to be equivalent in functionality to the applicants spatial phase synchronization means.

Due to the new grounds of rejection this action is Non-Final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1: Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,018,363 Horii in view of USPN 6,256,068 Takada et al.

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2: As for Claim 1, Horii teaches on Column 6, Lines 5-10 the use of an image pickup apparatus comprising: An image pickup element having a color coded filter (10); Column 4, Lines 24-37. Horii teaches that the outputted pixel values are color converted. This process is viewed as a synthesis process. Therefore, Horri teaches synthesis means for generating a synthesis signal based on a signal that is output from the image sensor. Horri teaches on Column 9, Lines 21-25 that the color difference signals generated from the color conversion circuitry is modulated into a chromatic signal. This is viewed as a chromaticness process. However, Horii does not teach the use of spatial phase synchronization means for synchronizing horizontal and vertical spatial phases based on output from each line in the image pickup element. Furthermore, Horii does not teach that the output from the synchronization means is input to the synthesis means.

Takada et al teaches on Column 5, Lines 13-57 in the abstract and depicts in Figures (1 and 4) that it is advantageous to output the image data from an image sensor to a horizontal and vertical interpolation circuits that multiply the image data by weight factors. This is viewed by the examiner as spatial phase synchronization means for synchronizing horizontal and vertical spatial phases. Takada et al teaches that it is advantageous to output the image data from an image sensor to a horizontal and vertical interpolation circuits in order to perform interpolation and flicker reduction at the same time. Therefore, improving image quality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to output the image data from an image sensor of Horri to a horizontal and vertical interpolation circuits that multiply the image data by weight

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factors as taught by Takada et al in order to perform interpolation and flicker reduction at the same time. Therefore, improving image quality.

3: In regards to Claim 2, Horri further depicts in Figure 2 and teaches on Column 12, Lines 6-13 that the color coded filter is a complimentary mosaic coding filter.

4: As for Claim 3, Horri further depicts in Figure 2 and teaches on Column 12, Lines 6-13 that the complimentary mosaic color coded filter is based on a repetition of two pixels horizontally by four lines vertically, and Wherein the filter comprises: a first line which is an alternative repetition of Cy (cyan) and Ye (yellow); a second line which is an alternate repetition of G (green) and Mg (magenta); a third line which is an alternate repetition of Cy and Ye; and a fourth line which is an alternate repetition of Mg and G.

5: In regards to Claim 4, Horri further teaches on Column 12, Lines 14-30 that the synthesis means generates new signals S1r, S2r, S1b, and S2b by performing the following operations:

$$S1r = Cy + G, S2r = Ye + Mg$$

$$S1b = Cy + Mg, S2b = Ye + G$$

Based on Cy (cyan), Ye (yellow), G (green), and Mg (magenta) of each pixel data in a signal whose horizontal and vertical spatial phases are synchronized in the spatial phase synchronization means.

6: As for Claim 5, Horri further teaches on Column 12, Lines 31-37 that the image pickup element (106) is read on a frame basis by independently scanning odd-numbered and even-numbered lines (interlaced).

7: In regards to Claim 6, Claim 6 is rejected for reasons discussed related to Claim 1, since Claim 1 is substantially equivalent to 6.

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8: As for Claim 7, Claim 7 is rejected for reasons discussed related to Claim 2, since Claim 2 is substantially equivalent to 7.

9: In regards to Claim 8, Claim 8 is rejected for reasons discussed related to Claim 3, since Claim 3 is substantially equivalent to 8.

10: As for Claim 9, Claim 9 is rejected for reasons discussed related to Claim 4, since Claim 4 is substantially equivalent to 9.

11: In regards to Claim 10, Claim 10 is rejected for reasons discussed related to Claim 5, since Claim 5 is substantially equivalent to 10.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,272,260 Furukawa et al see Figure 8; USPN 6,433,828 Kondo et al depicts in Figure 1 the use of horizontal and vertical interpolation filters; USPN 5,719,633 Nishio et al teaches the use of Vertical and horizontal operation circuits that use tap values for filter operations; USPN 5,552,827 Maenaka et al teaches the use of horizontal and vertical interpolation circuits; USPN 5,331,346 Shields et al depicts in Figure 4b the use of Tap Filters (11 and 12).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James M. Hannett
Examiner
Art Unit 2612

JMH
February 2, 2004


TUAN HO
PRIMARY EXAMINER